

ABSTRACT OF THE DISCLOSURE

A method is provided for producing a specific crosscoupling compound and a specific catalyst for producing the compound. The method includes reacting in the presence of a base and a nickel compound catalyst organic halide of the formula $n'(R^1X^1)_n$, wherein R^1 is a hydrocarbon group and the α and β carbons to X^1 are sp^3 carbon atoms; X^1 is a chlorine, bromine, or iodine atoms, and n and n' are 1 or 2 but not both 2, with a compound having the formula $m\{R^2(BX^2_2)_n\}$ where an R^2 is an aryl, heteroaryl, or alkenyl group, and n' is 1 or 2, X_2 is independently a hydroxyl group, an alkoxy or arylalkoxy group or X^2_2 together form an alkylenedioxy or arylenedioxy group, and m represents 1 or 2 but $m \leq n$, and the boron atom is bonded to a sp^2 carbon atom of R^2 group or a boronic acid trimer anhydride.